OIPE JUN 19 2002 PATENT & TRADEMARK OFFICE

Docket No.: 63956-011 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	
Antonio Cantoni, et al.	:	
Serial No.: 09/919,725	:	Group Art Unit: 2662
Filed: July 31, 2001	:	Examiner: Unknown

For: TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM

Reissue Declaration

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JUL 2 2 2002
Technology Center 2600

Commissioner for Patents
Washington, DC 20231

Sir:

As a below named inventor, I hereby declare that:

My residence, post office and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter claimed and for which a patent is sought on the invention entitled TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM, the specification of which

- ☐ is attached hereto.
- ☒ was filed on July 31, 2001 as Application Serial No. 09/919,725 and was amended on in first and second preliminary amendments filed heretofore and in a third preliminary amendment filed concurrently herewith.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is known to me to be material to patentability in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Applications(s):

Number	Country	Day/Month/Year filed	**Priority Claimed**
PI0884	Austrailia	Mar 17, 1987	x
PCT/AU88/00075	Austrailia	March 17, 1988	x

I hereby claim the benefit under 35 USC §119(e) of any United States provisional application(s) listed below.

Prior Provisional Application(s):

Application Number	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S. Application(s):

Serial No.	Filing Date	Status: Patented, Pending, Abandoned
07/283,364	April 28, 1989	now U.S. Patent No. 5,050,166 issued September 17, 1991

The applicant believes that the original patent to be wholly or partly inoperative by reason of the patentee claiming less than he had a right to claim, namely by failing to assert claims of the following scope:

(Note claims 1-14 were issued in a previous reissue application Serial No. 122,934 Filed: September 17, 1993, now U.S. reissued patent RE 37,494 which issued on January 1, 2002. That U.S. reissue patent and this application are divisional reissue applications of U.S. patent 5,050,166.)

15. A method of transmitting variable length messages on a network from a source to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted,

transmitting the slots on the network,

providing a type field in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

controlling the reassembly of received slots at the destination in accordance with said source identifier code, the first code, the second code, and the third code.

16. (Cancelled)

17. A method as claimed in claim 15 , further comprising
transmitting the destination address field in the message segment of the first slot of the message, and
checking a destination address field associated with the message, for a match with an address associated with the destination.

18. A method as claimed in claim **15**, further comprising storing message segments associated with a single message in a buffer.

19. **A** method as claimed in claim **18** further comprising

providing the source identifier code to a comparator in response to detection of said first code at said destination, and

in response to detection of the second code associated with a subsequently received slot providing the source identifier thereof to the comparator to check for a match, and

storing the message segment of the subsequently received slot in said buffer in response to detection of a match.

20. A method as claimed in claim **19**, further comprising outputting the reassembled slots in the buffer from the buffer as a reassembled message in response to detection of said third code.

21. A method as claimed in claim **15**, further comprising

coding, into the type field, a fourth code representing a single segment message, and

if said fourth code is detected in a slot received at the destination, storing the message segment thereof in a single segment buffer.

22. A method as claimed in claim **20**, further comprising

providing multiple comparators and buffers at the destination so as to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing the message segments of each message in respective buffers.

23. Apparatus for transmitting variable length messages on a network from a source to a destination in fixed length slots, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine including coding means

for providing a source identifier field in the header of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted, and

for providing a type field in the header field of each slot, and

for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling reassembly of the slots in accordance with respective source identifier codes of the slots, said control means being responsive to said source identifier code, said first code, said second code, and said third code.

24. (Cancelled)

25. Apparatus as claimed in claim **23** wherein the message includes a destination address field and wherein the segmentation machine is arranged to transmit the destination address field in the message segment of the first slot of the message.

26. A method of transmitting a variable-length message on a network from a source having a source address to a destination having a destination address, said method comprising:

segmenting the variable-length message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said fixed length slots including

a header field that includes a source identifier field, the source identifier field being substantially shorter than said destination address, and

a message segment;

providing a source identifier code in the source identifier field, said source identifier code being associated with the variable-length message;

providing a type field in the header of each slot,

coding, into the type field, a code selected from:

a first code representing a beginning of a message,

a second code representing a continuation of a message, and

a third code, representing an end of a message;

transmitting the slots on the network; and

controlling reassembly of slots at the destination in accordance with the source identifier code, first code, second code, and third code of slots received at the destination.

27. Apparatus for transmitting variable-length messages on a network from a source having a source address to a destination having a destination address in fixed length slots, said apparatus including:

a segmentation machine for segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including

a header field that includes a source identifier field, the source identifier field being substantially shorter than said destination address,

and a message segment;

coding means for providing the source identifier field with a source identifier code that is uniquely associated with the message to be transmitted for providing a type field in the header field of each slot, and for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling

reassembly of slots in accordance with respective source identifier codes, the first code, the second code, and the third code of the slots.

28. A method for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node having a source address to a destination node having a destination address, the method comprising:

segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots and a last slot, each of the slots including a header field and a message segment;

providing, in the header fields of each of the slots, a source identifier code associated with the message,

providing a type field for holding a code in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots from the source node; and

controlling reassembly of the message on the basis of information in the header field of slots received at the destination node.

29. The method as claimed in claim **28** further comprising storing, in a buffer at the destination node, message segments associated with a single message.

30. The method as claimed in claim **29**, further comprising

providing, to a comparator, the source identifier code of the first slot received at the destination node;

providing, to the comparator, the source identifier code of each subsequently received slot; and

storing the message segment of the subsequently received slot in the buffer in response to an occurrence of a match between the source identifier code of the first slot and the source identifier code of subsequent slots.

31. The method as claimed in claim **30**, further comprising outputting a reassembled message from the buffer in response to detection of the third code.

32. The method as claimed in claim **30**, further comprising

providing multiple comparators and buffers at the destination node to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing message segments from each message in a separate buffer.

33. An apparatus for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node, having a source address, to a destination node, having a destination address, the apparatus comprising:

a segmentation machine for segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots, and a last slot, each of the fixed-length slots including a header field, and a message segment, the segmentation machine being located, in use, at the source node;

a coder for providing, in the header field of each slot,

a source identifier field for holding a source identifier code associated with the message to be transmitted, and

a type field, for holding a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

a reassembly machine for controlling reassembly of slots into the message in accord with information in the header field, the reassembly machine being located, in use, at the destination node.

34. The apparatus as claimed in claim **33** wherein the reassembly machine further comprises a selector for checking the third code and for providing source identifier codes to the comparator for comparison with subsequently received source identifier codes.

35. The apparatus as claimed in claim **34**, wherein the reassembly machine further comprises a plurality of comparators for enabling concurrent receipt of slots associated with different messages.

36. The apparatus as claimed in claim 35, further comprising means for providing source identifier codes of received slots to the plurality of comparators, thereby enabling the comparators to match slots having the same source identifier codes.

37. The apparatus as claimed in claim **36**, further comprising:
a plurality of buffers for the message segments of the slots, and

a buffer selector circuit for selecting a particular buffer for receipt of all message segments of slots having the same source identifier code.

38. The apparatus as claimed in claim **34**, wherein the controller is configured to output a reassembled message from the buffer in response to detection of a third code, the reassembled message being associated with the source identifier code of the slot containing the detected third code.

39. The method of claim 15 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

40. The apparatus of claim 23 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

41. A method of transmitting variable length messages on a network to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted,

transmitting the slots on the network,

providing a type field in the header of each slot,

coding into the type field a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

controlling the reassembly of received slots for delivery to the destination in accordance with said source identifier code, and any of the first code, the second code, and the third code.

42. Apparatus for transmitting variable length messages on a network from a source to a destination in fixed length slots, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine providing

a source identifier field in the header of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted,

a type field in the header field of each slot, and

a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine controlling reassembly of the slots in accordance with the source identifier codes of the slots, and any of said first code, said second code, and said third code.

44. A method of transmitting a variable-length message on a network to a destination, said method comprising:

segmenting the variable-length message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said fixed length slots including

a header field that includes a source identifier field, and

a message segment;

providing a source identifier code in the source identifier field, said source identifier code being associated with the variable-length message;

providing a type field in the header of each slot,

coding, into the type field, a code selected from:

a first code representing a beginning of a message,

a second code representing a continuation of a message, and

a third code, representing an end of a message;

transmitting the slots on the network; and

controlling reassembly of slots in accordance with the source identifier code, and any of the first code, second code, and third code.

45. Apparatus for transmitting variable-length messages on a network to a destination in fixed length slots, said apparatus including:

a segmentation machine segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including

a header field that includes a source identifier field,

and a message segment;

a coder providing the source identifier field with a source identifier code that is associated with the message to be transmitted, a type field in the header field of each slot, and a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine controlling reassembly of slots in accordance with the source identifier codes, and any of the first code, the second code, and the third code of the slots.

46. A method of transmitting variable length messages on a network to a destination having a destination address, said method including the steps of:

segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including a header field, which includes a source identifier field which is substantially shorter than said destination address, and a message segment;

providing a source identifier code in the source identifier field, each source identifier code being associated with the message to be transmitted;

entering said destination address in the message segment of said first slot;

transmitting the slots on the network; and

controlling reassembly of slots in accordance with the source identifier code.

47. Apparatus for transmitting variable length messages on a network to a destination , said apparatus including:

a segmentation machine segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including a header field which includes a source identifier field and a message segment;

said segmentation machine providing a source identifier code in the source identifier field, each source identifier code being associated with the message to be transmitted, and entering said destination address in the message segment of said first slot;

a transmitter transmitting the slots on the network; and

a reassembly machine controlling reassembly of slots in accordance with the source identifier codes.

48. The method of claim 15 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

49. The apparatus of claim 23 in which the coding means provides each of the first code, the second code, and the third code in the headers of respective slots associated with a message.

50. The method of claim 26 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

51. The apparatus of claim 27 in which the coding means provides each of the first code, the second code, and the third code in the headers of slots associated with a message.

52. The method of claim 28 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

53. The apparatus of claim 33 in which the a coder provides, in respective header fields of slots associated with a message, each of the first code, the second code, and the third code.

54. The method of claim 41 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

55. The apparatus of claim 42 in which the segmentation machine provides each of the first code, the second code, and the third code in respective headers of slots associated with a message.

56. The method of claim 44 in which the step of coding, into the type field, field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

57. The apparatus of claim 45 in which the coder provides each of the first code, the second code, and the third code in respective headers of slots associated with a message.

58. A method for the connection-oriented transfer of variable-length messages in fixed-length slots via a source node and a destination node from a source having a source address to a destination having a destination address, the method comprising:

segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots and a last slot, each of the slots including a header field and a message segment;

providing, in the header field of each of the slots, a source identifier code associated with the message,

providing a type field in the header of each slot for holding a code,

coding into the type field a code for distinguishing a last slot from prior slots;

transmitting the slots from the source node; and

controlling reassembly of the message in accordance with information in the header fields of slots received at the destination node.

59. An apparatus for the connection-oriented transfer of variable-length messages in fixed-length slots via a source node and a destination node from a source having a source address, to a destination having a destination address, the apparatus comprising:

a segmentation machine for segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots, and a last slot, each of the fixed-length slots including a header field, and a message

segment, the segmentation machine being located, in use, at the source node;

a coder for providing, in the header field of each slot,

a source identifier field for holding a source identifier code associated with the message to be transmitted, and

a type field, for holding a code for distinguishing a last slot from previous slots; and

a reassembly machine for controlling reassembly of slots into the message in accordance with information in the header fields of slots received at the reassembly machine, the reassembly machine being located, in use, at the destination node.

60. Apparatus for transmitting variable length messages in fixed length slots on a network, via a source node and a destination node, from a source having a source address to a destination having a destination address, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine including a coder providing

a source identifier field in the header of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted, and

a type field in the header field of each slot, and

a code in the type field selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine controlling reassembly of the slots in accordance with respective source identifier codes of the slots, said reassembly machine being responsive to said source identifier code, said first code, said second code, and said third code.

61. The method of claim 41 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

62. The method of claim 42 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

63. The method of claim 44 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

64. The method of claim 45 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

65. The method of claim 59 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

66. The method of claim 59 in which the step of coding, into the type field, field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

67. The method of claim 60 in which the source identifier code is a label which enables the logical association of all fixed length slots belonging to said message and which enables them to be reassembled into the original message.

68. The method of claim 60 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

69. A method as set forth in claim 41, wherein step of controlling the reassembly of received slots is accomplished using the source identifier code and at least the third code.

70. Apparatus of claim 43, wherein the reassembly machine controls the reassembly of received slots is accomplished using the source identifier code and at least the third code.

71. A method as set forth in claim 44, wherein step of controlling the reassembly of slots is accomplished using the source identifier code and at least the third code.

That all error(s) being corrected in this reissue application including those corrected in amendments referred to above arose without any deceptive intention on the part of the applicant(s).

The undersigned hereby each declare that all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorney(s) and/or agent(s): Steven W. Allis, Reg. No. 50,532; Stephen A. Becker, Reg. No. 26,527; John G. Bisbikis, Reg. No. 37,095; Daniel Bucca, Reg. No. 42,368; Kenneth L. Cage, Reg. No. 26,151; Jennifer Chen, Reg. No. 42,404; Bernard P. Codd, Reg. No. 46,429; Lawrence T. Cullen, Reg. No. 44,489; Paul Devinsky, Reg. No. 28,553; Margaret M. Duncan, Reg. No. 30,879; Shamita De. Etienne-Cummings, Reg. No. 46,072; Ramyar M. Farid, Reg. No. 46,692; Brian E. Ferguson, Reg. No. 36,801; Michael E. Fogarty, Reg. No. 36,139; John R. Fuisz, Reg. No. 37,327; Willem F. Gadiano, Reg. No. 37,136; Keith E. George, Reg. No. 34,111; John A. Hankins, Reg. No. 32,029; Eric J. Kraus, Reg. No. 36,190; Catherine Krupka, Reg. No. 46,227; Jack Q. Lever, Reg. No. 28,149; Raphael V. Lupo, Reg. No. 28,363; Burman Y. Mathis III, Reg. No. 44,907; Michael A. Messina, Reg. No. 33,424; Dawn L. Palmer, Reg. No. 41,238; Joseph H. Paquin, Jr., Reg. No. 31,647; Scott D. Paul, Reg. No. 42,984; William D. Pegg, Reg. No. 42,988; Robert L. Price, Reg. No. 22,685; Gene Z. Rubinson, Reg. No. 33,351; Brian K. Seidleck, Reg. No. P-51,321; Joy Ann G. Serauskas, Reg. No. 27,952; David A. Spenard, Reg. No. 37,449; Arthur J. Steiner, Reg. No. 26,106; David L. Stewart, Reg. No. 37,578; Wesley Strickland, Reg. No. 44,363; Michael D. Switzer, Reg. No. 39,552; David M. Tennant, Reg. No. 48,362; Judith L. Toffenetti, Reg. No. 39,048; Daniel S. Trainor, Reg. No. 43,959; Kelli N. Watson, Reg. No. 47,170; Cameron K. Weiffenbach, Reg. No. 44,488; Aaron Weisstuch, Reg. No. 41,557; Edward J. Wise, Reg. No. 34,523; Jeffrey A. Woller, Reg. No. 48,041; Alexander V. Yampolsky, Reg. No. 36,324; Robert W. Zelnick, Reg. No. 36,976; and Wei-Chen Chen, admitted under 37 CFR 10.9(b) all of

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with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and all future correspondence should be addressed to them.

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Citizenship: Australia	
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Full name of second inventor: Robert M. Newman	
Inventor's signature:	Date:
Residence:	
Citizenship:	
Post Office Address:	

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PATENT & TRADEMARK OFFICE

Docket No.: 63956-011 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	
Antonio Cantoni, et al.	:	
Serial No.: 09/919,725	:	Group Art Unit: 2662
Filed: July 31, 2001	:	Examiner: Unknown

For: TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM

Reissue Declaration

RECEIVED
JUL 22 2002
Technology Center 2600

Commissioner for Patents
Washington, DC 20231

Sir:

As a below named inventor, I hereby declare that:

My residence, post office and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter claimed and for which a patent is sought on the invention entitled TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM, the specification of which

- ☐ is attached hereto.
- ☒ was filed on July 31, 2001 as Application Serial No. 09/919,725 and was amended on in first and second preliminary amendments filed heretofore and in a third preliminary amendment filed concurrently herewith.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is known to me to be material to patentability in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Applications(s):

Number	Country	Day/Month/Year filed	**Priority Claimed**
PI0884	Austrailia	Mar 17, 1987	x
PCT/AU88/00075	Austrailia	March 17, 1988	x

I hereby claim the benefit under 35 USC §119(e) of any United States provisional application(s) listed below.

Prior Provisional Application(s):

Application Number	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S. Application(s):

Serial No.	Filing Date	Status: Patented, Pending, Abandoned
07/283,364	April 28, 1989	now U.S. Patent No. 5,050,166 issued September 17, 1991

The applicant believes that the original patent to be wholly or partly inoperative by reason of the patentee claiming less than he had a right to claim, namely by failing to assert claims of the following scope:

(Note claims 1-14 were issued in a previous reissue application Serial No. 122,934 Filed: September 17, 1993, now U.S. reissued patent RE 37,494 which issued on January 1, 2002. That U.S. reissue patent and this application are divisional reissue applications of U.S. patent 5,050,166.)

15. A method of transmitting variable length messages on a network from a source to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted,

transmitting the slots on the network,

providing a type field in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

controlling the reassembly of received slots at the destination in accordance with said source identifier code, the first code, the second code, and the third code.

16. (Cancelled)

17. A method as claimed in claim 15 , further comprising
transmitting the destination address field in the message segment of the first slot of the message, and
checking a destination address field associated with the message, for a match with an address associated with the destination.

18. A method as claimed in claim **15**, further comprising storing message segments associated with a single message in a buffer.

19. **A** method as claimed in claim **18** further comprising

providing the source identifier code to a comparator in response to detection of said first code at said destination, and

in response to detection of the second code associated with a subsequently received slot providing the source identifier thereof to the comparator to check for a match, and

storing the message segment of the subsequently received slot in said buffer in response to detection of a match.

20. A method as claimed in claim **19**, further comprising outputting the reassembled slots in the buffer from the buffer as a reassembled message in response to detection of said third code.

21. A method as claimed in claim **15**, further comprising

coding, into the type field, a fourth code representing a single segment message, and

if said fourth code is detected in a slot received at the destination, storing the message segment thereof in a single segment buffer.

22. A method as claimed in claim **20**, further comprising

providing multiple comparators and buffers at the destination so as to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing the message segments of each message in respective buffers.

23. Apparatus for transmitting variable length messages on a network from a source to a destination in fixed length slots, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine including coding means

for providing a source identifier field in the header of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted, and

for providing a type field in the header field of each slot, and

for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling reassembly of the slots in accordance with respective source identifier codes of the slots, said control means being responsive to said source identifier code, said first code, said second code, and said third code.

24. (Cancelled)

25. Apparatus as claimed in claim **23** wherein the message includes a destination address field and wherein the segmentation machine is arranged to transmit the destination address field in the message segment of the first slot of the message.

26. A method of transmitting a variable-length message on a network from a source having a source address to a destination having a destination address, said method comprising:

segmenting the variable-length message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said fixed length slots including

a header field that includes a source identifier field, the source identifier field being substantially shorter than said destination address, and

a message segment;

providing a source identifier code in the source identifier field, said source identifier code being associated with the variable-length message;

providing a type field in the header of each slot,

coding, into the type field, a code selected from:

a first code representing a beginning of a message,

a second code representing a continuation of a message, and

a third code, representing an end of a message;

transmitting the slots on the network; and

controlling reassembly of slots at the destination in accordance with the source identifier code, first code, second code, and third code of slots received at the destination.

27. Apparatus for transmitting variable-length messages on a network from a source having a source address to a destination having a destination address in fixed length slots, said apparatus including:

a segmentation machine for segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including

a header field that includes a source identifier field, the source identifier field being substantially shorter than said destination address,

and a message segment;

coding means for providing the source identifier field with a source identifier code that is uniquely associated with the message to be transmitted for providing a type field in the header field of each slot, and for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling

reassembly of slots in accordance with respective source identifier codes, the first code, the second code, and the third code of the slots.

28. A method for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node having a source address to a destination node having a destination address, the method comprising:

segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots and a last slot, each of the slots including a header field and a message segment;

providing, in the header fields of each of the slots, a source identifier code associated with the message,

providing a type field for holding a code in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots from the source node; and

controlling reassembly of the message on the basis of information in the header field of slots received at the destination node.

29. The method as claimed in claim **28** further comprising storing, in a buffer at the destination node, message segments associated with a single message.

30. The method as claimed in claim **29**, further comprising

providing, to a comparator, the source identifier code of the first slot received at the destination node;

providing, to the comparator, the source identifier code of each subsequently received slot; and

storing the message segment of the subsequently received slot in the buffer in response to an occurrence of a match between the source identifier code of the first slot and the source identifier code of subsequent slots.

31. The method as claimed in claim **30**, further comprising outputting a reassembled message from the buffer in response to detection of the third code.

32. The method as claimed in claim **30**, further comprising

providing multiple comparators and buffers at the destination node to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing message segments from each message in a separate buffer.

33. An apparatus for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node, having a source address, to a destination node, having a destination address, the apparatus comprising:

a segmentation machine for segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots, and a last slot, each of the fixed-length slots including a header field, and a message segment, the segmentation machine being located, in use, at the source node;

a coder for providing, in the header field of each slot,

a source identifier field for holding a source identifier code associated with the message to be transmitted, and

a type field, for holding a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

a reassembly machine for controlling reassembly of slots into the message in accord with information in the header field, the reassembly machine being located, in use, at the destination node.

34. The apparatus as claimed in claim **33** wherein the reassembly machine further comprises a selector for checking the third code and for providing source identifier codes to the comparator for comparison with subsequently received source identifier codes.

35. The apparatus as claimed in claim **34**, wherein the reassembly machine further comprises a plurality of comparators for enabling concurrent receipt of slots associated with different messages.

36. The apparatus as claimed in claim 35, further comprising means for providing source identifier codes of received slots to the plurality of comparators, thereby enabling the comparators to match slots having the same source identifier codes.

37. The apparatus as claimed in claim **36**, further comprising:
a plurality of buffers for the message segments of the slots, and

a buffer selector circuit for selecting a particular buffer for receipt of all message segments of slots having the same source identifier code.

38. The apparatus as claimed in claim **34**$_1$ wherein the controller is configured to output a reassembled message from the buffer in response to detection of a third code, the reassembled message being associated with the source identifier code of the slot containing the detected third code.

39. The method of claim 15 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

40. The apparatus of claim 23 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

41. A method of transmitting variable length messages on a network to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted,

transmitting the slots on the network,

providing a type field in the header of each slot,

coding into the type field a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

controlling the reassembly of received slots for delivery to the destination in accordance with said source identifier code, and any of the first code, the second code, and the third code.

42. Apparatus for transmitting variable length messages on a network from a source to a destination in fixed length slots, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine providing

a source identifier field in the header of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted,

a type field in the header field of each slot, and

a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine controlling reassembly of the slots in accordance with the source identifier codes of the slots, and any of said first code, said second code, and said third code.

44. A method of transmitting a variable-length message on a network to a destination, said method comprising:

segmenting the variable-length message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said fixed length slots including

a header field that includes a source identifier field, and

a message segment;

providing a source identifier code in the source identifier field, said source identifier code being associated with the variable-length message;

providing a type field in the header of each slot,

coding, into the type field, a code selected from:

a first code representing a beginning of a message,

a second code representing a continuation of a message, and

a third code, representing an end of a message;

transmitting the slots on the network; and

controlling reassembly of slots in accordance with the source identifier code, and any of the first code, second code, and third code.

45. Apparatus for transmitting variable-length messages on a network to a destination in fixed length slots, said apparatus including:

a segmentation machine segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including

a header field that includes a source identifier field,

and a message segment;

a coder providing the source identifier field with a source identifier code that is associated with the message to be transmitted, a type field in the header field of each slot, and a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine controlling reassembly of slots in accordance with the source identifier codes, and any of the first code, the second code, and the third code of the slots.

46. A method of transmitting variable length messages on a network to a destination having a destination address, said method including the steps of:

segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including a header field, which includes a source identifier field which is substantially shorter than said destination address, and a message segment;

providing a source identifier code in the source identifier field, each source identifier code being associated with the message to be transmitted;

entering said destination address in the message segment of said first slot;

transmitting the slots on the network; and

controlling reassembly of slots in accordance with the source identifier code.

47. Apparatus for transmitting variable length messages on a network to a destination , said apparatus including:

a segmentation machine segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including a header field which includes a source identifier field and a message segment;

said segmentation machine providing a source identifier code in the source identifier field, each source identifier code being associated with the message to be transmitted, and entering said destination address in the message segment of said first slot;

a transmitter transmitting the slots on the network; and

a reassembly machine controlling reassembly of slots in accordance with the source identifier codes.

48. The method of claim 15 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

49. The apparatus of claim 23 in which the coding means provides each of the first code, the second code, and the third code in the headers of respective slots associated with a message.

50. The method of claim 26 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

51. The apparatus of claim 27 in which the coding means provides each of the first code, the second code, and the third code in the headers of slots associated with a message.

52. The method of claim 28 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

53. The apparatus of claim 33 in which the a coder provides, in respective header fields of slots associated with a message, each of the first code, the second code, and the third code.

54. The method of claim 41 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

55. The apparatus of claim 42 in which the segmentation machine provides each of the first code, the second code, and the third code in respective headers of slots associated with a message.

56. The method of claim 44 in which the step of coding, into the type field, field comprises using each of the first code, the second code, and the third code in respective headers of slots associated with a message.

57. The apparatus of claim 45 in which the coder provides each of the first code, the second code, and the third code in respective headers of slots associated with a message.

58. A method for the connection-oriented transfer of variable-length messages in fixed-length slots via a source node and a destination node from a source having a source address to a destination having a destination address, the method comprising:

segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots and a last slot, each of the slots including a header field and a message segment;

providing, in the header field of each of the slots, a source identifier code associated with the message,

providing a type field in the header of each slot for holding a code,

coding into the type field a code for distinguishing a last slot from prior slots;

transmitting the slots from the source node; and

controlling reassembly of the message in accordance with information in the header fields of slots received at the destination node.

59. An apparatus for the connection-oriented transfer of variable-length messages in fixed-length slots via a source node and a destination node from a source having a source address, to a destination having a destination address, the apparatus comprising:

a segmentation machine for segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots, and a last slot, each of the fixed-length slots including a header field, and a message

segment, the segmentation machine being located, in use, at the source node;

a coder for providing, in the header field of each slot,

a source identifier field for holding a source identifier code associated with the message to be transmitted, and

a type field, for holding a code for distinguishing a last slot from previous slots; and

a reassembly machine for controlling reassembly of slots into the message in accordance with information in the header fields of slots received at the reassembly machine, the reassembly machine being located, in use, at the destination node.

60. Apparatus for transmitting variable length messages in fixed length slots on a network, via a source node and a destination node, from a source having a source address to a destination having a destination address, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and a message segment, said segmentation machine including a coder providing

a source identifier field in the header of each slot, said source identifier field including a source identifier code that is associated with the message to be transmitted, and

a type field in the header field of each slot, and

a code in the type field selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine controlling reassembly of the slots in accordance with respective source identifier codes of the slots, said reassembly machine being responsive to said source identifier code, said first code, said second code, and said third code.

61. The method of claim 41 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

62. The method of claim 42 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

63. The method of claim 44 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

64. The method of claim 45 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

65. The method of claim 59 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

66. The method of claim 59 in which the step of coding, into the type field, field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

67. The method of claim 60 in which the source identifier code is a label which enables the logical association of all fixed length slots belonging to said message and which enables them to be reassembled into the original message.

68. The method of claim 60 in which the step of coding into the type field comprises using each of the first code, the second code, and the third code in the headers of slots associated with a message.

69. A method as set forth in claim 41, wherein step of controlling the reassembly of received slots is accomplished using the source identifier code and at least the third code.

70. Apparatus of claim 43, wherein the reassembly machine controls the reassembly of received slots is accomplished using the source identifier code and at least the third code.

71. A method as set forth in claim 44, wherein step of controlling the reassembly of slots is accomplished using the source identifier code and at least the third code.

That all error(s) being corrected in this reissue application including those corrected in amendments referred to above arose without any deceptive intention on the part of the applicant(s).

The undersigned hereby each declare that all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorney(s) and/or agent(s): Steven W. Allis, Reg. No. 50,532; Stephen A. Becker, Reg. No. 26,527; John G. Bisbikis, Reg. No. 37,095; Daniel Bucca, Reg. No. 42,368; Kenneth L. Cage, Reg. No. 26,151; Jennifer Chen, Reg. No. 42,404; Bernard P. Codd, Reg. No. 46,429; Lawrence T. Cullen, Reg. No. 44,489; Paul Devinsky, Reg. No. 28,553; Margaret M. Duncan, Reg. No. 30,879; Shamita De. Etienne-Cummings, Reg. No. 46,072; Ramyar M. Farid, Reg. No. 46,692; Brian E. Ferguson, Reg. No. 36,801; Michael E. Fogarty, Reg. No. 36,139; John R. Fuisz, Reg. No. 37,327; Willem F. Gadiano, Reg. No. 37,136; Keith E. George, Reg. No. 34,111; John A. Hankins, Reg. No. 32,029; Eric J. Kraus, Reg. No. 36,190; Catherine Krupka, Reg. No. 46,227; Jack Q. Lever, Reg. No. 28,149; Raphael V. Lupo, Reg. No. 28,363; Burman Y. Mathis III, Reg. No. 44,907; Michael A. Messina, Reg. No. 33,424; Dawn L. Palmer, Reg. No. 41,238; Joseph H. Paquin, Jr., Reg. No. 31,647; Scott D. Paul, Reg. No. 42,984; William D. Pegg, Reg. No. 42,988; Robert L. Price, Reg. No. 22,685; Gene Z. Rubinson, Reg. No. 33,351; Brian K. Seidleck, Reg. No. P-51,321; Joy Ann G. Serauskas, Reg. No. 27,952; David A. Spenard, Reg. No. 37,449; Arthur J. Steiner, Reg. No. 26,106; David L. Stewart, Reg. No. 37,578; Wesley Strickland, Reg. No. 44,363; Michael D. Switzer, Reg. No. 39,552; David M. Tennant, Reg. No. 48,362; Judith L. Toffenetti, Reg. No. 39,048; Daniel S. Trainor, Reg. No. 43,959; Kelli N. Watson, Reg. No. 47,170; Cameron K. Weiffenbach, Reg. No. 44,488; Aaron Weisstuch, Reg. No. 41,557; Edward J. Wise, Reg. No. 34,523; Jeffrey A. Woller, Reg. No. 48,041; Alexander V. Yampolsky, Reg. No. 36,324; Robert W. Zelnick, Reg. No. 36,976; and Wei-Chen Chen, admitted under 37 CFR 10.9(b) all of

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with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and all future correspondence should be addressed to them.

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Inventor's signature:	Date: 31/5/
Residence: AUSTRALIA	
Citizenship: AUSTRALIA	
Post Office Address:	

Docket No 63956-011 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Antonio Cantoni, et al.

Serial No.: 09/919,725 Group Art Unit: 2662

Filed: July 31, 2001 Examiner: Unknown

For: TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM

CONSENT OF ASSIGNEE UNDER 37. CFR 1.172

QPSX Communications Pty Ltd. is the owner of the above identified application by virtue of assignments from inventors Antonio Cantoni and Robert M. Newman of parent patent 5,050,166 to QPSX Communications Ltd. recorded among the assignment records of the Patent and Trademark Office on October 19, 1995 at Reel 7689, Frame 0585 and at Reel 7690, Frame 0028. The name of QPSX Communications Ltd. was subsequently changed to QPSX Communications Pty Ltd. QPSX Communications Pty Ltd. does hereby consent to the filing of the above identified reissue application.

The undersigned hereby certifies that he is authorized to act on behalf of the assignee, QPSX Communications Pty Ltd., by virtue of his position as General Manager.

The undersigned hereby declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Matt Callahan
General Manager
QPSX Communications Pty Ltd.,

OIPE JC76
JUN 19 2002
PATENT & TRADEMARK OFFICE

Docket No.: 63956-011

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In re Application of

Antonio Cantoni, et al

Serial No. 09/919,725 Group Art Unit: 2662

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For: TRANSFER OF MESSAGES IN A MULTIPLEXED SYSTEM

AUTHORITY OF THE ASSIGNEE TO TAKE ACTION UNDER 37 C.F.R. 3.73

the undersigned, do hereby certify:

1. That I am authorized to action on behalf of QPSX Communications Pty Ltd. by virtue of my position as General Manager.

2. That QPSX is the owner of the above identified application by virtue of assignments from inventors Antonio Cantoni and Robert M. Newman of parent patent 5,050,166 to QPSX Communications Ltd. recorded among the assignment records of the Patent and Trademark Office on October 19, 1995 at Reel 7689, Frame 0585 and at Reel 7690, Frame 0028. The name of QPSX Communications Ltd. was subsequently changed to QPSX Communications Pty Ltd.

3. That by virtue of those assignments QPSX Communications Pty Ltd. is authorized to act and direct the prosecution of the above identified application.

The undersigned hereby declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Matt Callahan
General Manager
QPSX Communications Pty., Ltd.,

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General Manager
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